

### **ABSTRACT**

A rotary-acting valve is disclosed. In some embodiments, the rotary-acting valve is the pilot or first stage of a two-stage control valve and can be used to create an improved propulsion system for a missile. In the illustrative embodiment, the rotary-acting pilot valve comprises a movable rotor that resides in a chamber. The chamber includes three ports: a gas inlet port, a control volume port that couples to the second stage of a two-stage valve, and a gas vent port. The rotor in the pilot valve selectively pneumatically couples the second stage to either the gas inlet port or the gas vent port. When the second stage is connected to the gas inlet port, a piston (part of the second stage valve) moves to a blocking position in which it blocks the mouth of a thrust nozzle. When the second stage is coupled to the gas vent port, the piston moves to a non-blocking position with respect to the mouth of the thrust nozzle.